CONTINENTAL SHELF RESEARCH

VOLUME 18, 1998

VOLUME CONTENTS AND AUTHOR INDEX

Editors

PROFESSOR MICHAEL COLLINS: School of Ocean and Earth Science, Southampton Oceanography Centre, University of Southampton, Southampton SO14 3ZH, U.K.

e-mail: shelfres@soc.soton.ac.uk

PROFESSOR RICHARD W. STERNBERG: University of Washington, College of Ocean and Fishery Sciences, 1013, NE 40th Street, Box 355645, Seattle, WA 98195–5645, U.S.A. e-mail: csr@ocean.washington.edu



CONTINENTAL SHELF RESEARCH

PROFESSOR MICHAEL COLLINS: School of Ocean and Earth Science, Southampton Oceanography Centre, University of Southampton, Southampton SO14 3ZH, U.K. e-mail: shelfres@soc.soton.ac.uk

Editorial Assistant Dr Georgina Owrid

PROFESSOR RICHARD W. STERNBERG: University of Washington, College of Ocean and Fishery Sciences, 1013 NE 40th Street, Box 355645, Seattle, WA 98195-5645, U.S.A. e-mail: csr@ocean.washington.edu

Editorial Assistant ANITA WHITNEY

Associate Editors

D. CACCHIONE — MENLO PARK, CA, U.S.A. J. McMANUS — ST ANDREWS, U.K. A. D. HEATHERSHAW — SOUTHAMPTON, U.K. T. HOPKINS — RALEIGH, NC, U.S.A.

Editorial Advisory Board

J. AIKEN — PLYMOUTH, U.K.

R. C. ALLER — STONY BROOK, NY, U.S.A.

F. T. BANNER — LONDON, U.K.

R. CHESTER — LIVERPOOL, U.K. M. DAGG — CHAUVIN, LA, U.S.A.

A. M. DAVIES — BIRKENHEAD, U.K. R. DEIGAARD — LYNGBY, DENMARK

D. DRAKE — MENLO PARK, CA, U.S.A. J. E. ECKMAN — SAVANNAH, GA, U.S.A.

G. EVANS — JERSEY, U.K.

C. T. FRIEDRICHS — GLOUCESTER POINT,

VA, U.S.A

J. S. GRAY — OSLO, NORWAY

D. HUNTLEY — PLYMOUTH, U.K.

B. O. JANSSON — STOCKHOLM, SWEDEN

C. LATOUCHE — TALANCE, FRANCE

O. MADSEN — CAMBRIDGE, MA, U.S.A.

I. McCAVE — Cambridge, U.K.
B. A. McKEE — New Orleans, LA, U.S.A.
H. O. MOFJELD — Seattle, WA, U.S.A.

C. A. NITTROUER — STONY BROOK, NY, USA.
J. OLTMAN-SHAY — BELLEVUE, WA, U.S.A.
J. F. A. SLEATH — CAMBRIDGE, U.K.
P. A. TYLER — SOUTHAMPTON, U.K.
E. WOLANSKI — TOWNSVILLE, AUSTRALIA
L. D. WRIGHT — GLOUCESTER POINT, VA, U.S.A.

J. T. F. ZIMMERMAN — TEXEL.

THE NETHERLANDS

Publishing Office

Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, U.K. Tel: (+1865) 843000; Fax: (+1865) 843010.

Published monthly plus additional issues in April, August and December.

Advertising information. Advertising orders and enquiries can be sent to: Europe and ROW: Rachel Gresle-Farthing, Elsevier Science Ltd., Advertising Department, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK; phone: (+44) (1865) 843565; fax: (+44) (1865) 843976; e-mail: r.gresle-farthing@elsevier.co.uk. USA and Canada: Elsevier Science Inc., Mr Tino DeCarlo, 655 Avenue of the Americas, New York, NY 10010-5107, USA; phone: (+1) (212) 633 3815; fax: (+1) (212) 633 3820; e-mail: t.decarlo@elsevier.com. Japan: Elsevier Science K.K., Advertising Department, 9-15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106, Japan; phone: (+81) (3) 5561-5033; fax: (+81) (3) 5561 5047.

Subscription Information
Annual Institutional Subscription Rates 1997: Europe, The CIS and Japan 2283 Dutch Guilders. All other countries U.S.\$1312. Associated Personal Subscription Rates are available on request for those whose institutions are library subscribers. Dutch Guilder prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice.

Orders, claims, and product enquiries: please contact the Customer Support Department at the Regional Sales Office nearest to you:

New York: Elsevier Science, PO Box 945, New York, NY 10159-0945, USA; phone: (+1)(212) 633 3730 [toll free number for North American customers: 1-888-4ES-INFO (437-4636)]; fax: (+1) (212) 633 3680; e-mail: usinfo-f@elsevier.com

Amsterdam: Elsevier Science, PO Box 211, 1000 AE Amsterdam, The Netherlands; phone: (+31) 20 4853 757; fax: (+31) 20 4853432; e-mail: nlinfo-f@elsevier.nl

Tokyo: Elsevier Science K.K., 9-15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106, Japan; phone: (+81) (3) 5561 5033; fax: (+81) (3) 5561 5047; e-mail: info@elsevier.co.jp

Singapore: Elsevier Science, No. 1 Temasek Avenue, #17-01 Millenia Tower, Singapore 039192; phone: (+65) 434 3727; fax: (+65) 337 2230; e-mail: asiainfo@elsevier.com.sg

Rio de Janeiro: Elsevier Science, Rua Sete de Setembro 111/16 Andar, 20050-002 Centro, Rio de Janeiro – RJ, Brazil; phone: (+55) (21) 509 5340; fax: (+55) (21) 507 1991; e-mail: elsevier@campus.com.br [Note (Latin America): for orders, claims and help desk information, please contact the Regional Sales Office in New York as listed above]

Back Issues: Back issues of all previously published volumes are available direct from Elsevier Science Offices (Oxford and New York). Complete volumes and single issues can be purchased for 1991–1997. Earlier issues are available in high quality photo-duplicated copies as complete volumes only. Back volumes on microfilm are available from UMI, 300 North Zeeb Road, Ann Arbor, MI 48106, U.S.A.

© 1998 Elsevier Science Ltd. All rights reserved.

Contents of Volume 18

		January
B. HACKETT, L. P. RØED	1	A numerical study of the slope current northwest of the British Isles
P. E. HOLLOWAY and B. BARNES	31	A numerical investigation into the bottom bound- ary layer flow and vertical structure on internal waves on a continental slope
H. SCHINKE, W. MATTHÄUS	67	On the causes of major Baltic inflows—an analysis of long time-series
R. K. REED	99	Confirmation of a convoluted flow over the southeastern Bering Sea shelf
D. J. WILDISH, G. B. J. FADER, P. LAWTON and A. J. MACDONALD	105	The acoustic detection and characteristics of sublittoral bivalve reefs in the Bay of Fundy
H. CHARNOCK and P. D. KILLWORTH	115	Comments on "The geostrophic velocity field in shallow water over topography" by T. S. Hopkins
T. S. HOPKINS	117	Author's reply to comments on "The geostrophic velocity field in shallow water over topography" by H. Charnock and P. D. Killworth
Current Awareness	B 1	
List of Forthcoming papers for Continental Shelf Research	I	

February-April

SPECIAL ISSUE

JOint Numerical Sea MODelling Group: JONSMOD '96

A. DAVIES and P. DYKE	121	Preface
H. CHEN and P. P. G. DYKE	123	Multivariate time-series model for suspended sediment concentration
H. GERRITSEN and W. J. BERENTSEN	151	A modelling study of tidally induced equilibrium sand balances in the North Sea during the Holocene
J. E. JONES and A. M. DAVIES	201	Storm surge computations for the Irish Sea using three-dimensional numerical model including wave-current interaction
C. N. K. MOOERS and J. WANG	253	On the implementation of a three-dimensional circulation model for Prince William Sound, Alaska

E. Deleersnijder, J. Wang and C. N. K. Mooers	279	A two-compartment model for understanding the simulated three-dimensional circulation in Prince William Sound, Alaska
A. M. DAVIES, S. C. M. KWONG and R. A. FLATHER	289	A three-dimensional model of wind-driven circulation on the shelf: application to the storm of January 1993
B. ÅLANDSVIK and R. HANSEN	341	Numerical simulation of the circulation in the Svalbardbanken area in the Barents Sea
A. M. Davies and P. Hall	357	The sensitivity of tidal current profiles in the North Channel of the Irish Sea to the parameterization of momentum diffusion
J. XING and A. DAVIES	405	Formulation of a three-dimensional shelf edge model and its application to internal tide generation
A. M. RIDDLE	441	The specification of mixing in random walk models for dispersion in the sea
Current Awareness	B 9	
List of Forthcoming papers for Continental Shelf Research	I	
List of contents for Deep-Sea	II	
Research I, Vol. 45, No. 1		
Research I, Vol. 45, No. 1		April
Research I, Vol. 45, No. 1 S. Li and T. A. McClimans	457	April The effects of winds over a barotropic retrograde slope current
	457 487	The effects of winds over a barotropic retrograde
S. Li and T. A. McClimans		The effects of winds over a barotropic retrograde slope current An algorithm for the retrieval of suspended sediment in coastal waters of China from AVHRR
S. Li and T. A. McClimans Y. Li, W. Huang and M. Fang	487	The effects of winds over a barotropic retrograde slope current An algorithm for the retrieval of suspended sediment in coastal waters of China from AVHRR data The effect of the North Sea on oscillations of the
S. Li and T. A. McClimans Y. Li, W. Huang and M. Fang A. Wróblewski	487 501	The effects of winds over a barotropic retrograde slope current An algorithm for the retrieval of suspended sediment in coastal waters of China from AVHRR data The effect of the North Sea on oscillations of the mean monthly sea levels in the Baltic Sea Eddy-induced flow of Scotian shelf water across
S. Li and T. A. McClimans Y. Li, W. Huang and M. Fang A. Wróblewski J. J. Bisagni and P. C. Smith J. K. Lewis, I. Shulman	487 501 515	The effects of winds over a barotropic retrograde slope current An algorithm for the retrieval of suspended sediment in coastal waters of China from AVHRR data The effect of the North Sea on oscillations of the mean monthly sea levels in the Baltic Sea Eddy-induced flow of Scotian shelf water across Northeast Channel, Gulf of Maine Assimilation of Doppler radar current data into
S. Li and T. A. McClimans Y. Li, W. Huang and M. Fang A. Wróblewski J. J. Bisagni and P. C. Smith J. K. Lewis, I. Shulman and A. F. Blumberg	487501515541	The effects of winds over a barotropic retrograde slope current An algorithm for the retrieval of suspended sediment in coastal waters of China from AVHRR data The effect of the North Sea on oscillations of the mean monthly sea levels in the Baltic Sea Eddy-induced flow of Scotian shelf water across Northeast Channel, Gulf of Maine Assimilation of Doppler radar current data into numerical ocean models

	Conte	ents of Volume 18
		May
B. G. RUESSINK	585	The temporal and spatial variability of infragravity energy in a barred nearshore zone
D. R. LYNCH, C. E. NAIMIE and C. G. HANNAH	607	Hindcasting the Georges Bank circulation. Part I: Detiding
G. Wattayakorn, B. King, E. Wolanski and P. Suthanaruk	641	Seasonal dispersion of petroleum contaminants in the Gulf of Thailand
M. MASÓ, A. SABATÉS and M. P. OLIVAR	661	Short-term physical and biological variability in the shelf-slope region of the NW Mediterranean during the spring transition period
X. Guo and T. YANAGI	677	Variation of residual current in Tokyo Bay due to increase of fresh water discharge
P. D. THORNE, P. J. HARDCASTLE and J. W. DOLBY	695	Investigation into the application of cross- correlation analysis on acoustic backscattered signals from suspended sediments to measure nearbed current profiles
Current awareness	B41	
		June
A. A. Androsov, Y. M. Liberman, A. V. Nekrasov D. A. Romanenkov and N. E. Voltzinger	715 ⁄,	Numerical study of the M ₂ tide on the north Siberian Shelf
S. K. KANG, SR. LEE and H. J. LIE	739	Fine grid tidal modeling of the Yellow and East China Seas
G. Civitarese, M. Gačič,	773	Biogeochemical fluxes through the Strait of

Y. M. LIBERMAN, A. V. NEKRASOV D. A. ROMANENKOV and N. E. VOLTZINGER	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Siberian Shelf
S. K. KANG, SR. LEE and H. J. LIE	739	Fine grid tidal modeling of the Yellow and East China Seas
G. CIVITARESE, M. GAČIČ, A. VETRANO, A. BOLDRIN, D. BREGANT, S. RABITTI and E. SOUVERMEZOGLOU	773	Biogeochemical fluxes through the Strait of Otranto (Eastern Mediterranean)
YK. CHO and K. KIM	791	Structure of the Korea Strait bottom cold water and its seasonal variation in 1991
O. GUSTAFSSON, K. O. BUESSELER, W. R. GEYER, S. B. MORAN and P. M. GSCHWEND	805	An assessment of the relative importance of horizontal and vertical transport of particle-reactive chemicals in the coastal ocean
Current Awareness	B49	
List of Forthcoming papers for Continental Shelf Research	I	

List of contents for <i>Deep-Sea</i> Research I, Vol. 45, Nos. 2–3, 4–5	П	
V (1 124 - 2012)		July
C. J. ASHJIAN, S. L. SMITH, C. N. FLAGG and C. WILSON	831	Patterns and occurrence of diel vertical migration of zooplankton biomass in the Mid-Atlantic Bight described by an acoustic Doppler current profiler
C. K. GUAY and K. K. FALKNER	859	A survey of dissolved barium in the estuaries of major Arctic Rivers and adjacent seas
R. RAINE and T. McMahon	883	Physical dynamics on the continental shelf off southwestern Ireland and their influence on coastal phytoplankton blooms
Notes		
E. S. BRAGA and T. J. MÜLLER	915	Observation of regeneration of nitrate, phosphate and silicate during upwelling off Ubatuba, Brazil, 23°S
D. R. JOHNSON and A. D. WEIDEMANN	923	A tidal plume front and internal solitons
K- C. Wong	929	On the variability in the vertical structure of the Delaware coastal current
List of Forthcoming papers for Continental Shelf Research	I	
List of contents for Deep-Sea Research I, Vol. 45, No. 6.	III	
		August
M. Z. Li and C. L. Amos	941	Predicting ripple geometry and bed roughness under combined waves and currents in a continen- tal shelf environment
S. Hu and W. O. SMITH Jr.	971	The effects of irradiance on nitrate uptake and dissolved organic nitrogen release by phytoplankton in the Ross Sea
M. Dowd	991	On the estimation of circulation from density observations in coastal and shelf regions
M. CARLSSON	1015	A coupled three-basin sea level model for the Baltic Sea
T. YANAGI, T. SHIMIZU and HJ. LIE	1039	Detailed structure of the Kuroshio frontal eddy along the shelf edge of the East China Sea
List of contents for <i>Deep-Sea</i> Research I, Vol. 45, No. 7.	I	

August

SERIES ISSUE

NEARSHORE AND COASTAL OCEANOGRAPHY

L. T. DAVID and B. KJERFVE	1057	Tides and currents in a two-inlet coastal lagoon: Laguna de Términos, México
K. TODD HOLLAND	1081	Beach cusp formation and spacings at Duck, USA
A. LUGO-FERNÁNDEZ, H. H. ROBERTS and J. N. SUHAYDA	1099	Wave transformations across a Caribbean fringing- barrier coral reef
J. YE and R. W. GARVINE	1125	A model study of estuary and shelf tidally driven circulation
A. VALLE-LEVINSON, C. LI, T. C. ROYER and L. P. ATKINSON	1157	Flow patterns at the Chesapeake Bay entrance
G. MASSELINK and M. HUGHES	1179	Field investigation of sediment transport in the swash zone

September

SPECIAL ISSUE

The North Sea Sediment Resuspension Experiment (SERE)

A. W. MORRIS and M. J. HOWARTH	1203	Bed stress induced SEdiment REsuspension (SERE 88/89)
J. WILLIAMS, J. D. HUMPHERY, P. J. HARDCASTLE and D. J. WILSON	1215	Field observations of hydrodynamic conditions and suspended particulate matter in the southern North Sea
M. J. HOWARTH	1235	The effect of stratification on tidal current profiles
C. F. JAGO and S. E. JONES	1255	Observation and modelling of the dynamics of benthic fluff resuspended from a sandy bed in the southern North Sea
S. E. JONES, C. F. JAGO, A. J. BALE, D. CHAPMAN, R. J. M. HOWLAND and J. JACKSON	1283	Aggregation and resuspension of suspended particulate matter at a seasonally stratified site in the southern North Sea: physical and biological controls

VIII	Conte	nts of Volume 18
K. R. Dyer and T. J. Moffat	1311	Fluxes of suspended matter in the East Anglian plume southern North Sea
A. J. BALE and A. W. MORRIS	1333	Organic carbon in suspended particular material in the North Sea: effect of mixing resuspended and background particles
A. A. ROWDEN, C. F. JAGO and S. E. JONES	1347	Influence of benthic macrofauna on the geo- technical and geophysical properties of surficial sediment, North Sea
A. A. ROWDEN, M. B. JONES and A. W. MORRIS	1365	The role of Callianassa subterranea (Montagu) (THALASSINIDEA) in sediment resuspension in the North Sea
G. E. MILLWARD, A. W. MORRIS and A. D. TAPPIN	1381	Trace metals at two sites in the southern North Sea: results from a sediment resuspension study
A. J. BALE	1401	Sediment trap performance in tidal waters: comparison of cylindrical and conical collectors
List of Contents for Deep-Sea Research I, Vo. 45, No. 8	I	
		October
A. D. HEATHERSHAW, P. HALL and J. M. HUTHNANCE	1419	Measurements of the slope current, tidal characteristics and variability west of Vestfjorden, Norway
S. J. PALMER LOCARNINI, S. M. TURNER and P. S. LISS	1455	The distribution of dimethylsulfide, DMS, and dimethylsulfoniopropionate, DSMP, in waters off the western coast of Ireland
Gwo Wei Hung and Yu-Chia Chung	1475	Particulate fluxes, ²¹⁰ Pb and ²¹⁰ Po measured from sediment trap samples in a canyon off northeastern Taiwan
D. L. TANG, IH. NI, F. E. MÜLLER-KARGER and Z. J. LIU	1493	Analysis of annual and spatial patterns of CZCS- derived pigment concentration on the continental shelf of China
P. G. DRAKOPOULOS and A. LASCARATOS	1517	A preliminary study on the internal tides of the gulfs of Patras and Korinthos, Greece
GUEBUEM KIM, HAN-SOEB YANG	1531	Distributions of transition elements in the surface

sediments of the Yellow Sea

B57 Current Awareness

and YUKIO KODAMA

Forthcoming papers for Continental Shelf Research I

List of contents for Deep-Sea II Research I, Vo. 45, No. 9

November

P. REGNIER, A. MOUCHET, R. WOLLAST and F. RONDAY	1543	A discussion of methods for estimating residual fluxes in strong tidal estuaries
SL. WANG and CT. A. CHEN	1573	Bottom water at the center of the northeast China Sea in summer: remnant winter water
O. GREEFF, R. N. GLUD, J. GUNDERSEN, O. HOLBY and B. B. JØRGENSEN	1581	A benthic lander for tracer studies in the sea bed: in situ measurements of sulfate reduction
M. R. STEVENSON, D. DIAS-BRITO, J. L. STECH and M. KAMPEL	1595	How do cold water biota arrive in a tropical bay near Rio de Janeiro, Brazil?
P. MARIO and P. MICHEL	1613	Origin of late Holocene fine-grained sediments on the French Guiana shelf
A. VALLE-LEVINSON, J. L. MILLER and G. H. WHELESS	1631	Enhanced stratification in the lower Chesapeake Bay following northeasterly winds
E. WOLANSKI and E. DELEERSNIJDER	1649	Island-generated internal waves at Scott Reef, Western Australia
Book Review	1667	
Current Awareness	B75	
List of contents for Deep-Sea Research I, Vol. 45, No. 10	I	

December

SPECIAL ISSUE

MODELING GASSY SEDIMENT STRUCTURE AND BEHAVIOR

M. D. RICHARDSON and A. M. DAVIS	1669	Introduction
M. D. RICHARDSON and A. M. DAVIS	1671	Modeling methane-rich sediments of Eckernförde Bay
C. A. NITTROUER, G. R. LOPEZ, L. D. WRIGHT, S. J. BENTLEY, A. F. D'ANDREA, C. T. FRIEDRICHS, N. I. CRAIG and C. K. SOMMERFIELD	1689	Oceanographic processes and the preservation of sedimentary structure in Eckernförde Bay, Baltic Sea
Th. F. Wever, F. Abegg, H. M. Fiedler, G. Fechner and I. H. Stender	1715	Shallow gas in the muddy sediments of Eckernförde Bay, Germany

Index for Volume 18

C. S. MARTENS, D. B. ALBERT and M. J. ALPERIN	1741	Biogeochemical processes controlling methane in gassy coastal sediments—Part 1. A model coupling organic matter flux to gas production, oxidation and transport
D. B. Albert, C. S. Martens and M. J. Alperin	1771	Biogeochemical processes controlling methane in gassy coastal sediments—Part 2. Groundwater flow control of acoustic turbidity in Eckernförde Bay sediments
I. Bussmann and E. Suess	1795	Groundwater seepage in Eckernförde Bay (Western Baltic Sea): Effect on methane and salinity distribution of the water column
A. L. ANDERSON, F. ABEGG, J. A. HAWKINS, M. E. DUNCAN and A. P. LYONS	1807	Bubble populations and acoustic interaction with the gassy floor of Eckernförde Bay
R. D. STOLL and E. O. BAUTISTA	1839	Using the Biot theory to establish a baseline geoacoustic model for seafloor sediments
R. H. WILKENS and M. D. RICHARDSON	1859	The influence of gas bubbles on sediment acoustic properties: <i>in situ</i> , laboratory, and theoretical results from Eckernförde Bay, Baltic Sea
D. R. JACKSON, K. L. WILLIAMS, T. F. WEVER, C. T. FRIEDRICHS and L. D. WRIGHT	1893	Sonar evidence for methane ebullition in Eckernförde Bay
A. J. SILVA and H. G. BRANDES	1917	Geotechnical properties and behavior of high- porosity, organic-rich sediments in Eckernförde Bay, Germany
K. B. Briggs, P. D. Jackson, R. J. Holyer, R. C. Flint, J. C. Sandidge and D. K. Young	1939	Two-dimensional variability in porosity, density, and electrical resistivity of Eckernförde Bay sediment
Current awareness	B129	

